



## Natural Heritage & Endangered Species Program

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### NATURAL COMMUNITY FACT SHEET Sandplain Heathlands

#### DESCRIPTION

Sandplain Heathland communities -- or heath sand barrens or coastal heathlands -- are open, nearly treeless communities dominated by low-growing members of the Heath family (Ericaceae) and located either on stabilized dunes or plains of glacial deposits. Heathlands have been described as tundra-like in appearance and, on Nantucket, are known as moors. Various heaths and heath-like species thrive in the rugged environment of extreme daily and seasonal temperature variations, nutrient-poor soil, intense sunlight, and salt-laden winds. Patches of open soil and areas covered with fruticose lichens create a mosaic pattern. Although coastal heathlands are natural communities, until the late 19th century human activities actually increased their range. The setting of fires by Native Americans and logging and grazing of livestock by Europeans opened up habitat for heathland species. Since the late 1800's, however, land development, suppression of fires, and lifestyle changes have led to a drastic decline in this unique community *and* in the many interesting and rare species associated with it. One of the best and largest examples of Sandplain Heathland Community can be seen in Nantucket.



Heathland with Beach Heather and  
Broom Crowberry. Photo: BA Sorrie.

#### ENVIRONMENT

Sandplain Heathland plants are pioneering species well able to cope with the harsh environments and poor soils of stabilized dunes and glacial sandplains. In fact, it's thought that the original, most natural occurrences of sandplain heathland were in the salt spray zone, where other species don't compete well. Nevertheless, colonization by heath vegetation can lead to succession by less hardy species, including trees, that will eventually out compete the pioneers. For example, in Nantucket, succession by Scrub Oak (*Quercus ilicifolia*) and Pitch Pine (*Pinus rigida*) has supplanted heathland species in any areas. And both land development and suppression of fire prevent other heathland habitats from opening up. While they share many species, the heathland communities of southern New England are of two broad types: the dune heathland community and the glacial deposit upland, or glacial plain, community. Both are composed of low-growing plants, including several species that can reproduce clonally. The stabilized dune community is greatly influenced by sand movement: many of the plant species growing here can grow up through as much as 5 -10 cm (2 - 4 in.) of wind-deposited sand. Glacially deposited upland communities have more stable substrates but are also more vulnerable to invasion by shrubs and trees. Like most communities, Sandplain Heathlands form part of a gradient of communities. On the open end, Sandplain Heathlands grade into Sandplain Grasslands--possibly due to less wind, less salt, or more ground moisture. A type of hybrid community, in which species typical of both sandplain heathlands and sandplain grasslands, called grassy heath can occur as well. Less disturbed Sandplain Heathlands grade into Pitch Pine / Scrub Oak communities, with small patches of heathland vegetation occurring in small, low, open areas, such as in frost pockets, of Pitch Pine / Scrub Oak.

#### CHARACTERISTIC SPECIES IN MASSACHUSETTS

Common plants of Heathlands include Early Lowbush Blueberry (*Vaccinium angustifolium*), Late Lowbush Blueberry (*V. vacillans*), Pennsylvania Sedge (*Carex pensylvanica*), Bayberry (*Myrica pensylvanica*), Mayflower or Trailing Arbutus (*Epigaea repens*), and Little Bluestem (*Schizachyrium scoparium*). When they are dominant, the following species are considered to be indicators of Sandplain Heathlands: Bearberry (*Arctostaphylos uva-ursi*), Black Huckleberry (*Gaylussacia baccata*), Broom Crowberry (*Corema conradii*), Golden Heather

## NHESP Natural Community Fact Sheet – Sandplain Heathland Community

(*Hudsonia ericoides*), and False Heather (*Hudsonia tomentosa*). Plants that are found in the dune heathland, but that only rarely occur in the upland heath community, include Beach Pea (*Lathyrus japonicus*), Seaside Goldenrod (*Solidago sempervirens*) and False Heather. Many plants that are considered rare in Massachusetts occur in the heathland communities of New England, including Nantucket Shadbush (*Amelanchier nantucketensis*)(SC), Butterfly Weed (*Asclepias tuberosa*)(WL), Sandplain Blue-eyed Grass (*Sisyrinchium fuscum*)(SC), Broom Crowberry (*Corema conradii*)(SC), Eastern Silvery Aster (*Symphotrichum concolor*)(E), Sandplain Flax (*Linum intercursum*)(SC), Purple Cudweed (*Gamochaeta purpurea*)(E), and Bushy Rockrose (*Helianthemum dumosum*)(SC).

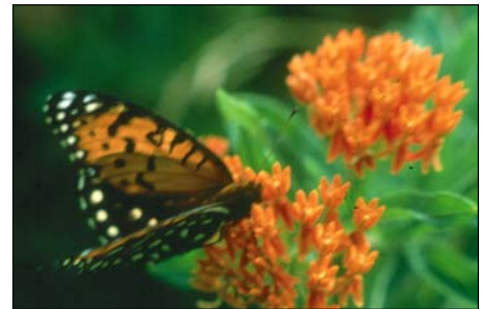
Only a few bird species nest in Sandplain Heathlands: these include Horned Lark (*Eremophila alpestris*), Savannah Sparrow (*Passerculus sandwichensis*), Vesper Sparrow (*Pooecetes gramineus*)(T), and the Short-eared Owl (*Asio flammeus*)(E), an endangered species in Massachusetts that has one of its main food sources in the voles that live in heathlands. Birds of prey (or raptors) that may be seen hunting over the Heathlands include Red-tailed Hawk (*Buteo jamaicensis*), American Kestrel (*Falco sparverius*), Merlin (*F. columbarius*), Peregrine Falcon (*F. peregrinus*)(E), and the Northern Harrier (*Circus cyaneus*)(T). Other animals that can be found in



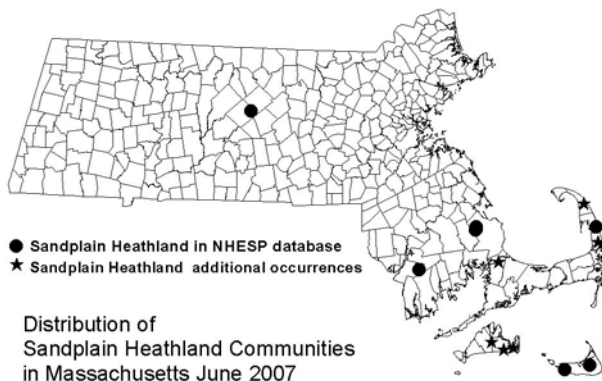
Adult of the Chain -dotted Geometer. Photo: M.W. Nelson, NHESP.

heathlands include the Red-bellied Snake (*Storeria occipitomaculata*), the Meadow Vole (*Microtus pennsylvanicus*), the Short-tailed Shrew (*Blarina brevicauda*) and such common insects as the Monarch butterfly (*Danaus plexippus*) and the Pearly Crescent Spot (*Phycoides tharos*). Several state protected species of insects are also found in Sandplain Heathlands, including the Chain-dotted Geometer (*Cingilia catenaria*)(SC), the Coastal Heathland Cutworm (*Abagrotis nefascia*)(SC), the Barrens Buckmoth (*Hemileuca maia*)(SC) and the Purple Tiger Beetle (*Cicindela*

*purpurea*)(SC). Before its extirpation from Massachusetts, the Regal Fritillary butterfly (*Speyeria idalia*) inhabited Sandplain Heathlands. (SC - Species of Special Concern, T - Threatened, E – Endangered. WL – non-regulatory Watch List)



Regal Fritillary nectaring on Butterfly Weed. NHESP file photo.



### RANGE

Coastal heathlands occur from Nova Scotia and the northern coast of Maine to northern New Jersey. (In New York, the communities are called maritime heathlands. Those in Maine and Nova Scotia represent a northern variation of heathland.) Massachusetts's heathland communities are found on Cape Cod, Nantucket, Martha's Vineyard, and the Elizabeth Islands. Heath on Nantucket totals several thousand acres. There are scattered inland occurrences.

### STATUS

The heathland community is considered to be vulnerable throughout its range. It has been estimated that about ninety per cent of coastal heathland in the northeastern United States has been lost since the middle of the nineteenth century. Reasons for this loss include

suppression of fires, cessation of grazing by livestock in the affected areas, development of land, coastal erosion, and succession by trees and non-heathland shrubs. Excessive foot traffic and the use of off-road vehicles also threaten heathlands. Damage can be done by just one vehicle passing over the habitat; fifty passes of a vehicle will devegetate the surface. Prescribed burning and controlled grazing are being used to maintain remaining heathlands.